

An aerial photograph of a winding asphalt road that snakes through a dense forest. The trees are in various shades of green and yellow, suggesting an autumn setting. In the background, rolling hills are visible under a sky with soft, warm light from a low sun, creating a golden glow over the landscape. The road has white lane markings and a few small cars are visible in the distance.

BALLARD™

Proven Performance Promise

We deliver fuel cell power
for a sustainable planet

ballard.com

Here for lifeTM

We deliver field-proven solutions and industry leading performance. We partner with our customers to deliver viable and durable fuel cell solutions—we're *Here for Life*TM



Proven

Ballard's technology is proven over 150m km on the road



Performance

A proven mix of innovation and reliability to lower product life cycle cost



Promise

Total end-to-end commitment to customer satisfaction and to reducing our carbon foot print



Ballard is the world leader in fuel cell technology

We have been dedicated to PEM fuel cell development, engineering excellence and future-forward zero emissions technologies for over 40 years.

BALLARD

Our vision

We deliver fuel cell power for a sustainable planet.

Our products are proven

Today, Ballard powers more fuel cell solutions across heavy-duty applications including buses, trucks, rail, marine and the stationary power markets than all competitors combined. And for good reason.

Our promise

We at Ballard are here for you. From cradle to grave, our technology experts and customer support networks are here to simplify your life and guide you through this revolutionary shift to a powerful zero emissions future.

Clean power for the future

Hydrogen power is electric power

The future of mobility is zero emission—from passenger cars to buses, trucks, and trains—and electrification is the only solution. But there are challenges in some categories—heavy-duty vehicles need to deliver the same performance and availability as existing diesel powertrains—in all weather and road conditions.

The solution: hydrogen fuel cells and a battery combination. Such hybrid architecture along with hydrogen's remarkable energy storage capacity, allows commercial vehicles to run on the same routes with similar payloads as diesel without lengthy stops to recharge large battery systems.

Hydrogen fuel cells offer the same benefits to stationary power generation. They are capable of addressing electric grid challenges with reliable zero-emission backup, micro-grid and peak power solutions.





We are here for you. Our proven technology, the performance of our fuel cell products and our customer care support network are here to ensure your success through the monumental transition to a cleaner, greener future. We're dedicated to investing in our technology, products, future scaling, and customer experience to bring fuel cell product life-cycle cost to parity with diesel and accelerate the transition to a zero-emission world. This is our customer promise.

Randy MacEwen
CEO, Ballard Power Systems

Proven fuel cell solutions

We are committed to zero-emission power systems at scale, from trucks and buses to trains, ships and stationary power systems. We have the experience, the expertise, the product portfolio and the support network you need.

- More than 15 years on the road and 1,400+ fuel cell electric transit buses in operation around the globe and new fleets being deployed every day
- In excess of 2,300 hydrogen-powered trucks on the road and industry leading automotive OEM and Tier 1 partnerships
- Eight fuel cell ship projects, including the world's first passenger ferry powered by liquid hydrogen
- Seven new hydrogen passenger and freight train projects with leading OEMs
- 8 MW of stationary power projects
- 1 GW of fuel cell products shipped to our global customers



**Ballard-powered vehicles
have surpassed 150 million km
of real-world use. That's enough
to circle the globe 3,750 times.**



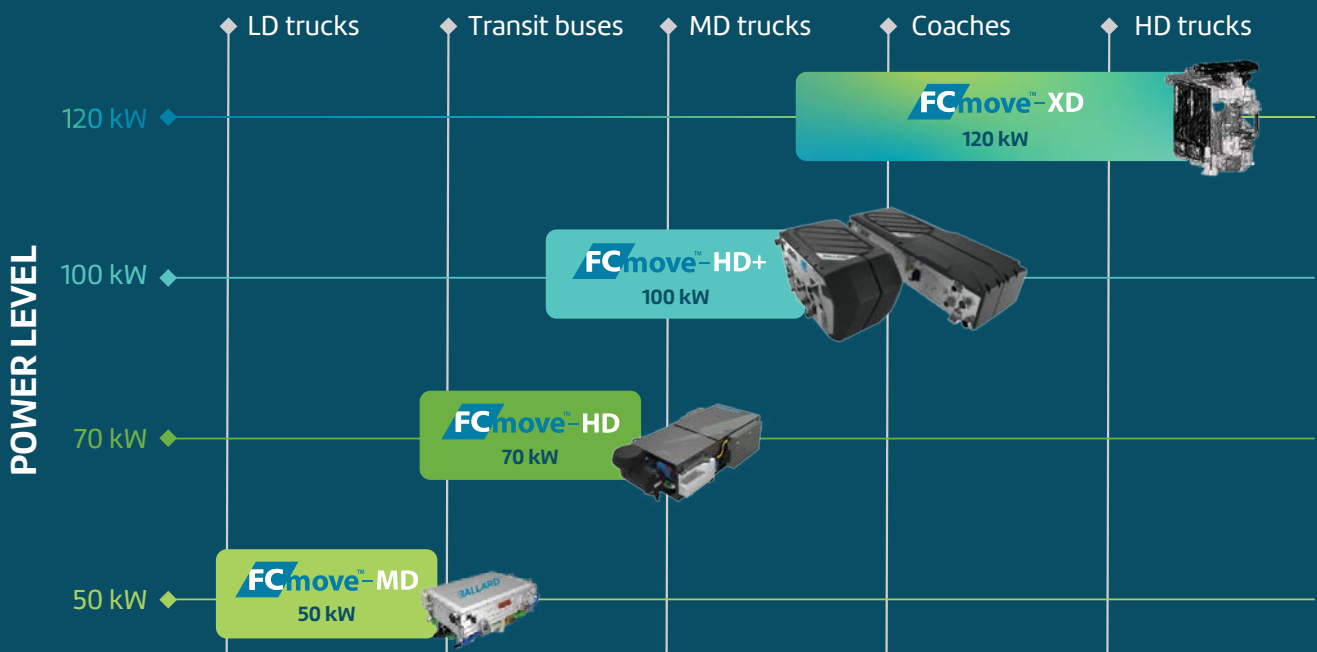
We can help you change the way
you power your part of the world.
We will continue to work with you to
improve and maintain your fuel cell
product during the life-time
of your vehicle.



Heavy-duty motive solutions

Today, emissions from freight transport—such as shipping and trucking—are increasing at a faster rate than any other sector.

Partnering with industry leaders to accelerate the adoption of zero-emission fuel cell technology, Ballard's product portfolio is designed to address the demanding power and performance requirements of fleet operators around the world.

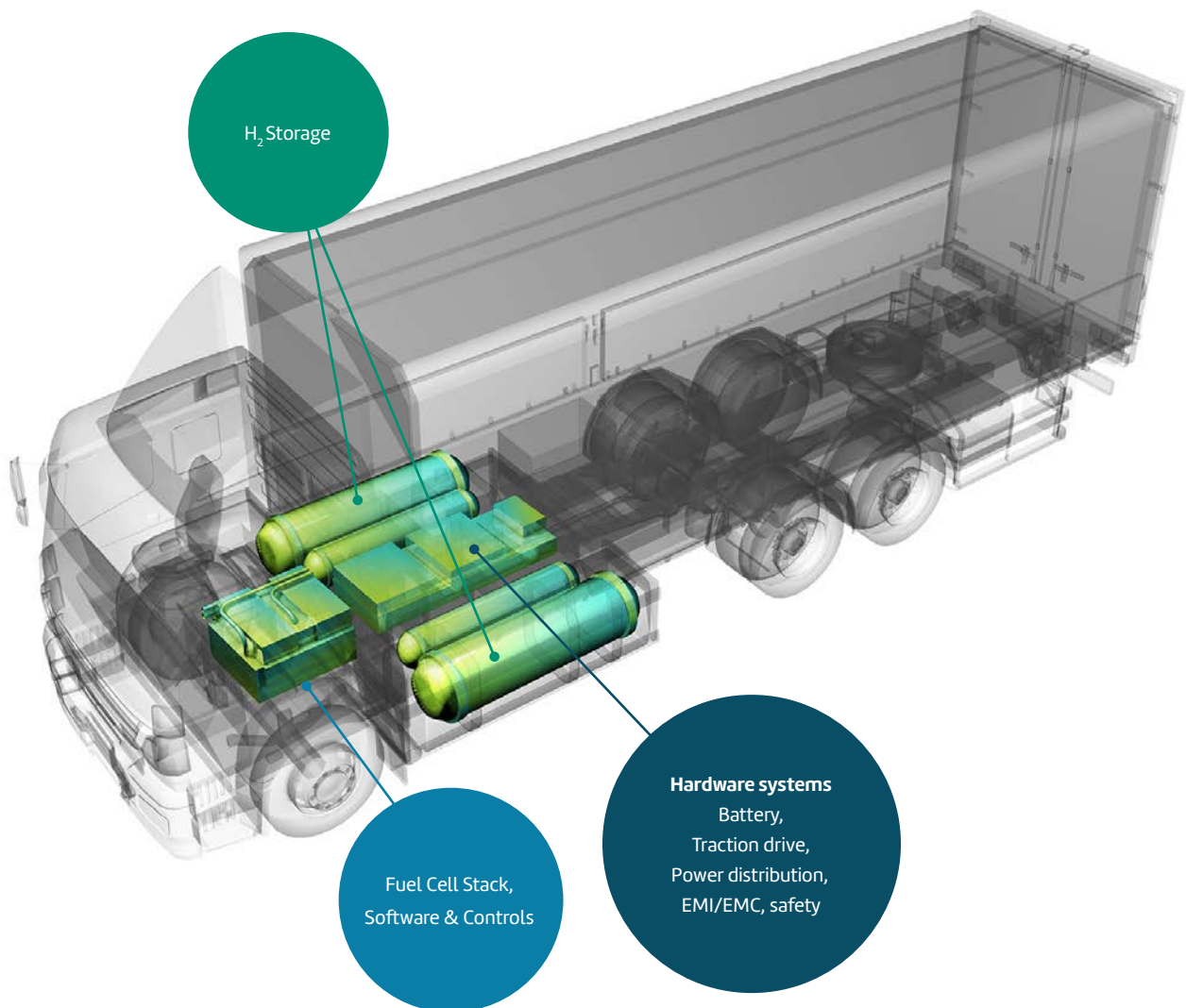


Available from 45kW and up to 120kW, the FCmove™ platform offers a compact, fully integrated, robust fuel cell power solution with impressive reduction in total life cycle cost.

Improving vehicle performance to accelerate adoption of zero-emission hydrogen mobility

Our expertise extends to powertrain integration alleviating the challenges of getting fuel cell technology into service. Ballard Motive Solutions engineering services support our customer development of new fuel cell vehicle platforms.

Our experience in fuel cell hybridization enables us to design intelligent energy systems that optimize energy and power management for improved vehicle performance and safety. Proven hybridization strategies and defined thermal management also reduce system degradation and enhance both fuel cell and battery lifetime.





Transit buses

Fuel cell technology is a proven and mature solution that has been successfully deployed in many public transit agencies around the world. Fuel cell manufacturers, bus OEMs, hydrogen suppliers and government agencies are working together and have developed integrated programs that accelerate the adoption of affordable fuel cell electric buses. Today more than 1,400 Ballard powered buses are in service.



Fuel cells enable the transition to 100% zero emissions bus fleets as a competitive solution for difficult routes, challenging climates and depots with space and energy constraints. Any route, any time.



FCmove™-HD+

Today more than 1,400 Ballard powered buses perform flawlessly in over 70 cities around the world.

Available at 70kW and up to 100kW, the FCmove™-HD and HD+ platform offers a compact, fully integrated, robust fuel cell power solution with impressive reduction in total life cycle cost.





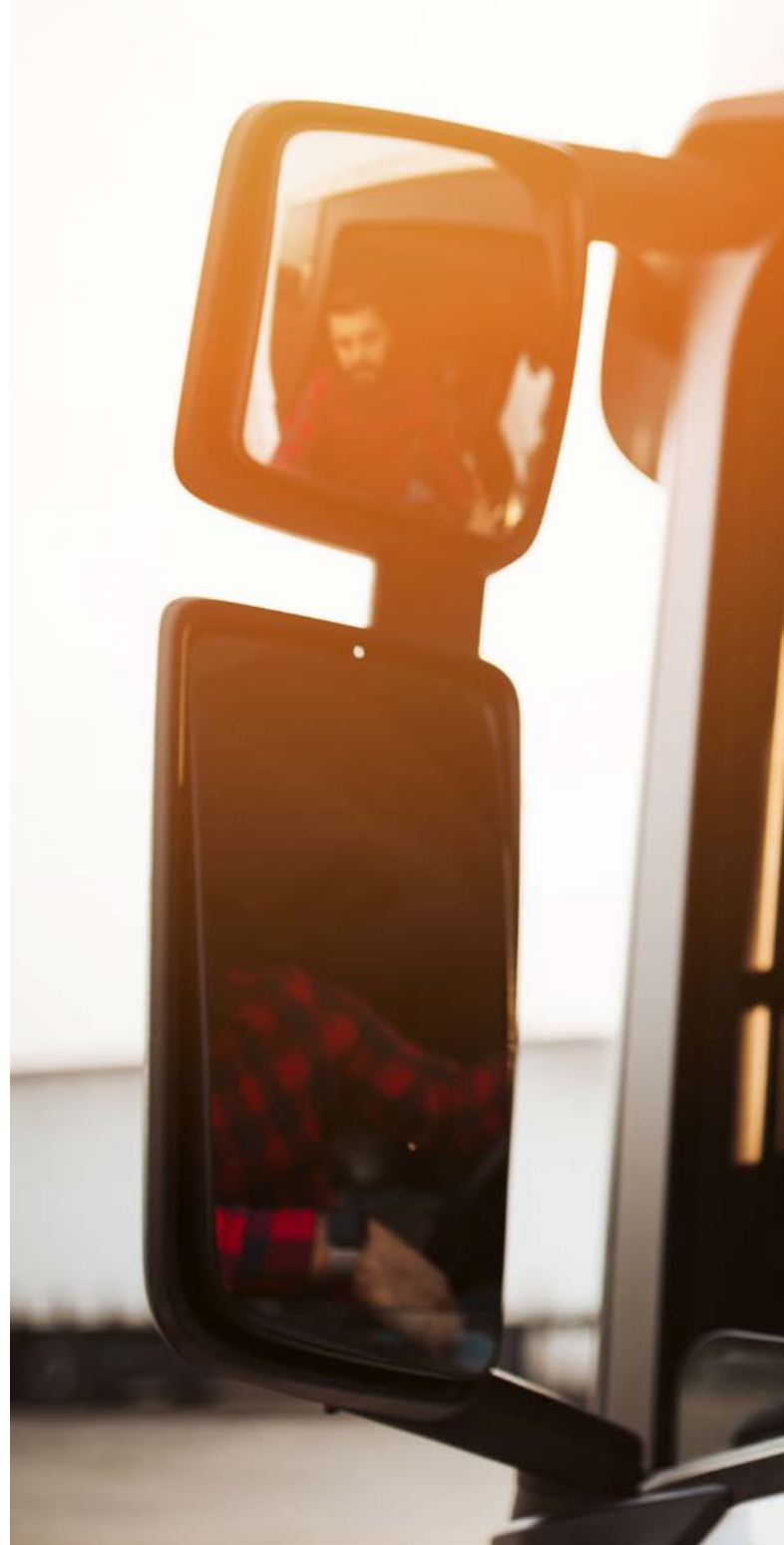


Trucks

Ballard's fuel cells are the longest-serving heavy-duty solutions available, powering more than 2,300 trucks globally.

Targeting various truck platforms from 6t (class 4) to heavy duty trucks (class 8), Ballard's fuel cell modules are 40% more compact, over 30% lighter, and with half the components of earlier generations—resulting in 40% improvement in total life-cycle cost.

Fuel cells are simply the only realistic zero emissions solution for heavy duty fleet operators to decarbonize their fleets. There is no compromise in payload or asset utilization.





FCmove™-XD

FCmove™-XD delivers 120kW with compact open engine design and up to 240kW in dual module configuration.



Rail

Hydrogen fuel cell power offers real potential to decarbonize rail operations. Ballard's fuel cell modules are purpose-built to perform in the extremely demanding drive cycles of passenger and freight trains, in extreme climates and conditions, and over a range of duty cycles with no compromise in performance. This enables electrification one train at the time with no catenary infrastructure.

Ballard offers flexible fuel cell solutions using 100kW or 200kW power modules to meet rail standards, suitable for multiple units for passenger service as well as locomotives for shunting or freight.





FCrail™



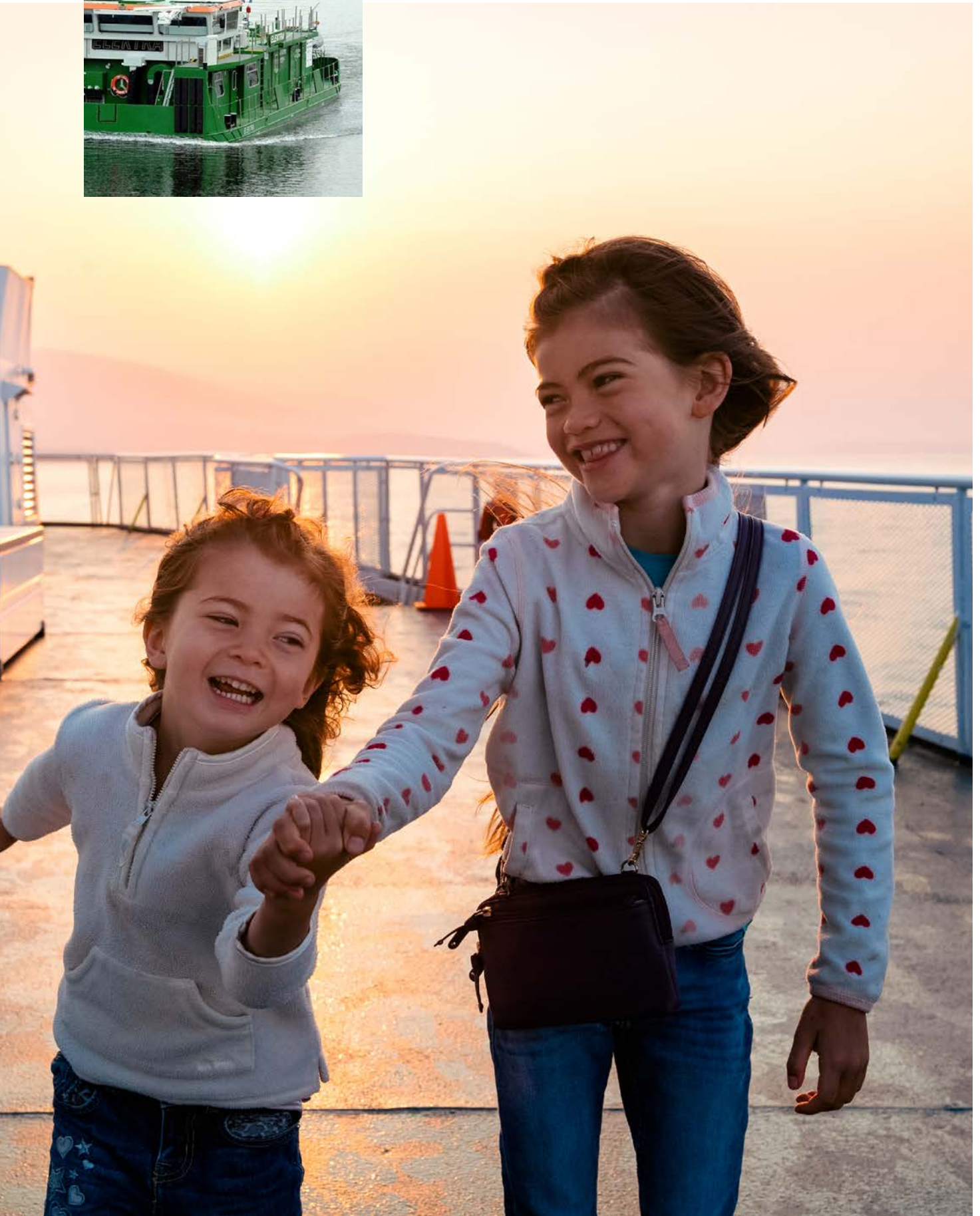
Marine

Designed hand-in-hand with the marine industry to withstand the rigors of the environment at sea, Ballard's FCwave™ is the world's first DNV Type Approved fuel cell module, meeting the stringent safety, functional and design requirements for the marine sector to take the next step in introducing zero-emission operations.

FCwave™ is built in 200kW modules and is scalable to MW power output and flexible integration onto any vessel, offering:

- Extended range—on both gaseous and liquid hydrogen fuels
- Reliable, safe operation proven through the durability of thousands of heavy duty vehicles around the world
- Flexible configurations that adapt to vessel power requirements and space constraints
- The most stringent safety standards
- Easy installation—no special gas zoning required







Stationary Power

For energy providers wanting to maximize their return on investment from renewables, provide continuous power, balance the grid over long durations, and provide zero-emission power to their customers, hydrogen fuel cells are a reliable and efficient solution. Hydrogen fuel cells offer a competitive solution for distributed power generation (shore power, EV charging, micro-grid) and critical infrastructure backup power.

FCgen®-XD from 200kW to 1.2MW Fuel Cell Generator

- 200kW stationary fuel cell power generator
- Expandable to up to six units or 1.2MW per installation
- Rapid start-up and shutdown, rapid transient response

ClearGen™ II 1.5MW Fuel Cell Generator

- Containerized 1.5MW fuel cell power system
- “Utility-scale”, with all fuel cell system components in single container (cooling and power conversion separate)





ClearGen™ II

Unparalleled product performance

We represent decades of innovation and engineering leadership in zero-emission fuel cell products.

With over \$1.5 billion invested in fuel cell product development over the past 40 years, we have developed an IP portfolio consisting of approximately 1,400 patents and applications while designing optimized membrane electrode assemblies (MEA) and fuel cell stacks and systems.

Our proven experience and extensive collaborations with OEMs and Tier 1s are driving continuous improvements in durability and performance while rapidly reducing product costs.

Across the entire product range, Ballard's fuel cell products feature high fuel efficiency, compact size, quick response to changes in electrical demand, and uncompromising safety features.

We have developed an IP portfolio consisting of approximately 1,400 patents and applications.



We deliver customized, heavy-duty fuel cell power for multiple applications

TECHNOLOGY

FCgen[®]-LCS

Leading MEA, plate and stack technology foundational to all fuel cell modules

PRODUCT PLATFORMS

FCmove[™]
45kW-120kW



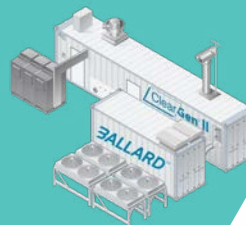
FCrail[™]
100kW
200kW



FCwave[™]
200kW



ClearGen[™] II
1.5MW



APPLICATIONS



Manufacturing expertise

We have over 40 years of experience in manufacturing PEM fuel cells. From discrete manufacturing through continuous roll-to-roll production of MEAs, automated stack assembly, module integration, and complete system testing—we have a deep knowledge from a broad range of all material process areas.

In Burnaby, Canada, we operate three facilities with a combined footprint of over 240,000 ft² (22,000 m²), providing unrivalled capacity to produce over 1GW of MEAs and fuel cell stacks. Our automated and continuous manufacturing processes ensure that we meet our customers' demands by delivering high-quality, competitive products.

We also have fuel cell product manufacturing facilities in the US and Denmark, as well as joint-venture manufacturing in China for stacks and modules.

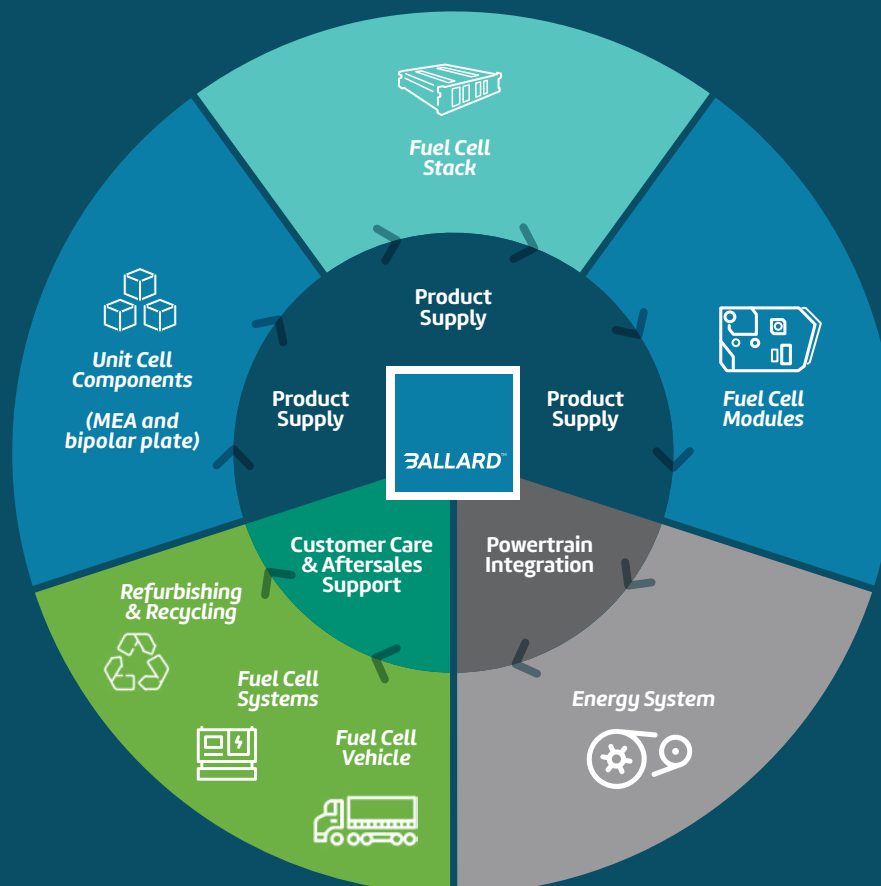


We are a vertically-integrated manufacturer throughout the fuel cell value chain



We design, build and test proprietary core technology components to produce optimized fuel cell products for all applications.

- Unit cell components (MEAs, plates)
- Fuel cell stacks
- Fuel cell modules & systems
- Balance-of-plant component integration
- Energy systems and powertrain integration



Our promise

Customer support, when and where you need it most

As much as we're a technology company, we are, first and foremost, a people company. We work hard to understand the challenges you face and anticipate your needs. From purchase to integration to support, we're more than just a supplier—we're your partner in your success.

Customer care

We are entirely committed to collaborating directly with our customers to provide premium support and service to exceed expectations.

Over the years, we've developed a support model that is proven and highly effective in supporting products deployed globally in large volumes.

Our comprehensive customer care model includes:

- **Call Centre**

Technical support for customers' mission-critical product applications. Customer care agents provide remote support to solve product issues via phone and email.

- **Product Repair**

We have a team of product experts and repair technicians ready to solve any issues from our repair centres in Canada and Denmark.

- **On-site Service**

Our technicians bring specialized equipment and technology to your site during product installation, site commissioning or product performance troubleshooting.

- **Spare Parts Logistics**

With remote parts warehouses located in key centres around the globe, our spare parts logistics systems ensure customers receive the parts they need promptly to maintain product operation.

- **Product Training**


We offer training sessions to transfer fuel cell technology knowledge and product operational understanding to our customers, ensuring successful product deployment. These training sessions are conducted at our Training Centres located in Canada and Europe. We also provide on-site training at customer facilities around the world.

- **Product Performance Monitoring**

Remote and onsite monitoring ensure the free flow of data to support ongoing corrective and preventative maintenance.

A world-class extended warranty

Because we stand so firmly behind our products and technology, we offer a best-in-class extended warranty—up to 1 million km of regular usage.

A photograph of two men in a factory or industrial setting. They are both wearing white face masks and dark clothing. The man in the background is bald and is using a tool to work on a blue cable. The man in the foreground has brown hair and is looking up at the cable. The background shows industrial equipment and a blue-tinted overlay on the left side of the image.

Ballard is your long-term partner

We are committed to assisting operators, integrators and OEMs in adapting fuel cell technology for their unique needs. We have empowered our partners around the globe to serve their customers and meet their zero-emission goals. We continue to work with them to improve and maintain their solutions.

Here for the world

Driving impact through strong environmental, social and governance practice

At Ballard, sustainability is an integral part of all that we do. Our vision of *Here for Life™* connotes our purpose to decarbonize mobility, to mitigate the existential threat of climate change, and pass on to the next generation a more livable planet.

Our ESG strategy is an important part of guiding that vision and bringing focus to the material ESG considerations embedded into how we work—helping us attract world-class talent, drive our own carbon neutral ambition and accelerate bringing zero-carbon mobility and stationary solutions to the global energy transition.

Since we released our first ESG report in 2019, we've continued our dedication to these material areas and are pleased to see results for these effort:



Employee retention

An impressive 95% annual employee retention rate



Gender Equality

Increased global female representation at the board, senior leadership and management levels



Reduced emissions

An approximate 7% reduction in overall greenhouse gas (GHG) emission intensity (tonnes of CO₂ per employee) and achieved a 19% reduction since 2019

All data is as of December 31, 2021



Energy Transition Impact

In 2021, Ballard powered vehicles in serviced prevented the consumption of approximately 52 million litres of diesel



Mission Carbon Zero

We continue to advance initiatives that drive achieving carbon neutrality by 2030. In 2021, we offset 798 tonnes CO₂ through investment in the Great Bear Forest Carbon Project



Transparency

Disclosed environmental performance through the CDP (previously Climate Disclosure Project) and continue to disclose overall performance in our annual ESG report



Recycling

Over 95% of the platinum used in our products is reclaimed

We have facilities in

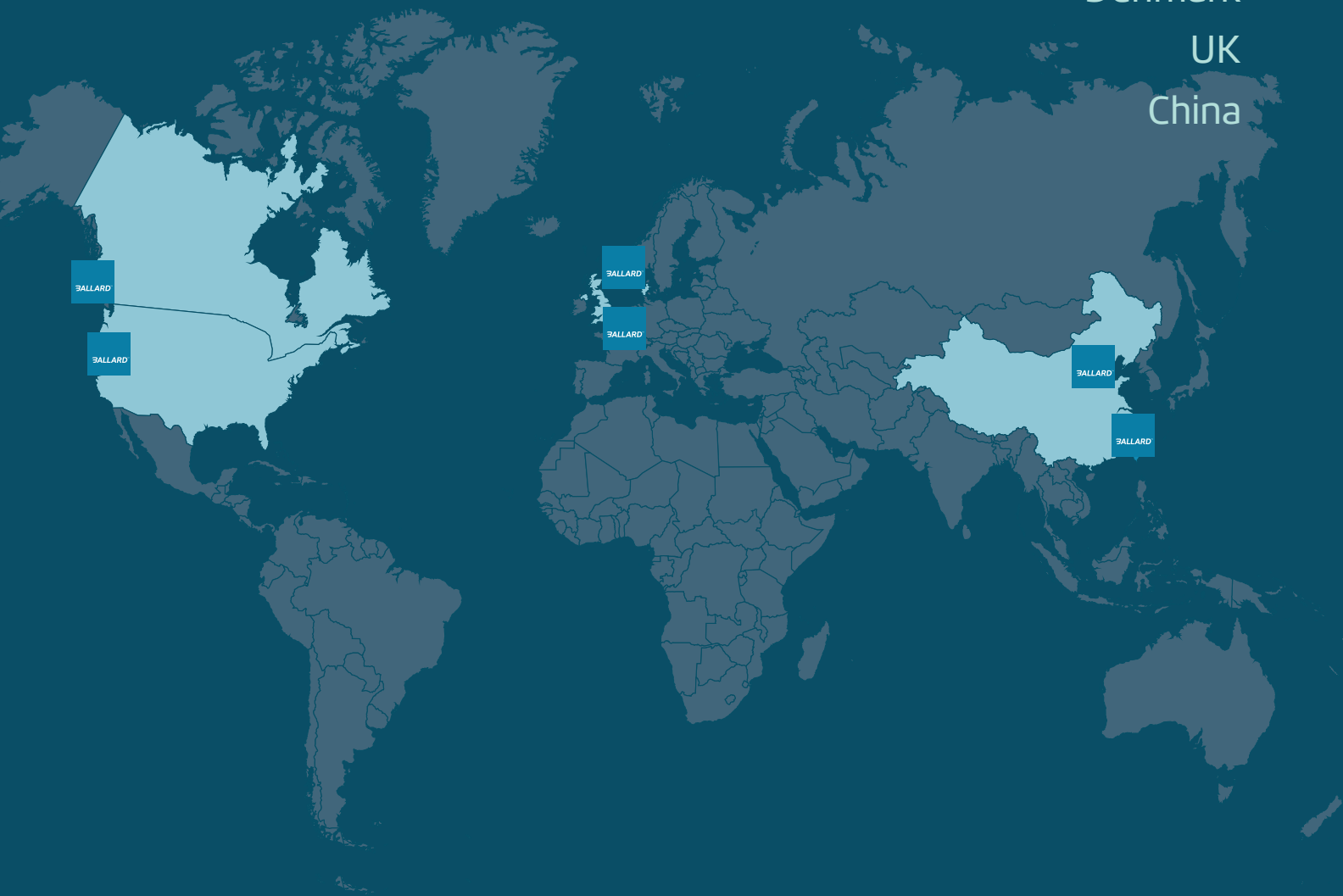
Canada

USA

Denmark

UK

China



Here for life™

To learn more about how we can help make hydrogen power an integral part of your journey toward a sustainable future, we invite you to contact one of our fuel cell experts today.

BALLARD™

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